REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-39 are pending in this application. Claims 1-10, 28, 29, 34, and 35 were

rejected under 35 U.S.C. §102(a) as anticipated by U.S. patent 6,462,754 to Chakraborty et

al. (herein "Chakraborty"). Claims 11-27, 30-32, and 36-38 were rejected under 35 U.S.C.

§103(a) as unpatentable over Chakraborty as applied to claims 1-10, 28, 29, 34, and 35, and

further in view of U.S. patent 6,504,569 to Jasinschi et al. (herein "Jasinschi"). Claims 24-

27, 33, and 39 were rejected under 35 U.S.C. §103(a) as unpatentable over Chakraborty as

applied to claims 1-5, and further in view of the publication "Panoramic Image Mosaics" to

Shum et al. (herein "Shum").

Addressing the above-noted rejections, those rejections are traversed by the present

response.

Initially, applicants note each of the claims is amended by the present response to

clarify features recited therein. Each of the independent claims now clarifies subject matter

describing a reference representative point of an object by a coordinate value and by

describing remaining representative points by a vector from other representative points. With

such a structure the vector can be described by a smaller amount of data.

Further, trajectories of the representative points (coordinate value and vector) are

defined by functions and the object region data is described by using the information

specifying function.[1] Amended independent claims 6 and 29 are amended by the present

response to now even additionally recite that the object region is described by expressing the

---

[1] Such features clarified in the claims are believed to be clear from the original specification for example in
Figures 10, 11A, and 11B.

movement of a representative point by vectors in consecutive frames and by converting the

trajectory of the vectors into an approximate function.[2]

The basis for the outstanding rejection indicates that in Chakraborty in each of the

frames one of the representative points of the reference points is represented by a coordinate

value and the remaining representative points are represented by a relative position data with

reference to the reference points, particularly citing Chakraborty at column 4, lines 8-15 and

43-46.[3]

However, with respect to that basis for the outstanding rejection applicants note

Chakraborty merely teaches that motion analysis may include an affine transformation.

Corresponding vertices and object types are interpolated between frames of shots of the video

to define a spline function such that the spline defines the motion of the objects of interest

between the frames. A video editor includes means for interpolating vertices of the objects

between frames to define motions of the objects of interest so that the objects of interest are

tracked during video play, see for example Chakraborty at column 4, lines 8-15 and 43-46.

However, Chakraborty differs from the claims as currently written as Chakraborty

does not disclose or suggest representing a reference point by a coordinate value and

remaining representative points by vectors with reference to other representative points, as

now clarified in the claims.

Further, the outstanding rejection cites Chakraborty at column 4, lines 50-65, column

8, line 26 to column 9, line 67 with respect to disclosing approximating first and second

trajectories with first and second functions, the first and second trajectories being obtained by

arranging, in the frame advancing direction, the coordinate value of the reference point and

the vectors of the remaining representative points.

---

[2] See for example the present specification at page 40, line 4 to page 41, line 12 and Figure 12 in the present specification.
[3] Office Action of February 22, 2005, page 2, paragraph 4A, lines 6-9.

However, with respect to that basis for the outstanding rejection applicants note Chakraborty merely teaches that a motion at each point in an image for two consecutive frames is described by $I_i (x-V_x(x,y), y-V_y(x,y)) = I_{i+1}(x,y)$. Applicants also note that although the Office Action indicates that V_x corresponds to a "first trajectory with a first function", and V_y corresponds to a "second trajectory with a second function", V_x and V_y relate to summations of partial derivatives of the image intensity at (x, y) that are taken over a small neighborhood. Thus, V_x and V_y do not correspond to a "trajectory with a function". Stated another way, Chakraborty obtains a trajectory of an object as a whole, but does not obtain trajectories over respective representative points of the object.

Moreover, Chakraborty does not define trajectories of the representative points (coordinate value and vector) by functions, nor does Chakraborty disclose describing the object region data by using the information specifying the function.

The features as discussed above are more clearly reflected in the claims as currently written and are believed to clearly distinguish over Chakraborty.
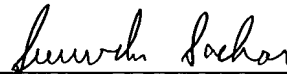
Moreover, no teachings in Jasinschi or Shum are believed to overcome the above-noted deficiencies in Chakraborty.

In such ways, applicants respectfully submit claims 1-39 as currently written clearly distinguish over the applied art.

As no other issues are pending in this application, it is respectfully submitted that the

present application is now in condition for allowance, and it is hereby respectfully requested

that this case be passed to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

James J. Kulbaski
Attorney of Record
Registration No. 34,648
Surinder Sachar
Registration No. 34,423

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)
SNS/rac

I:\ATTY\SNS\20's\208447\208447US-AM.DOC

26